

1 I claim:

2 1. A method of joining two steel pipes including a first pipe with a first flanged end and  
3 a second pipe with a first flanged end, the method comprising:

4 machining the first end of the first flanged pipe and the first end of the second  
5 flanged pipe such that an internal wall of each of said pipe ends is tapered at  
6 an angle;

7 providing a liner of appropriate length for the interior of each said pipe;

8 flaring the liner in the interior of each said pipe to conform to the taper of the  
9 machined internal wall of each said pipe ends;

10 providing a coupler with an internal diameter approximately equal to an untapered  
11 interior diameter of said respective pipes for engaging the internal flared pipe  
12 ends with the liner there between;

13 locating the first end of the first flanged pipe adjacent the first end of the second  
14 flanged pipe with the coupler therebetween;

15 providing a fastener for engaging the flanges located on adjacent ends of each  
16 respective pipe;

17 compressing the adjacent flanges, wherein the compression wedges the coupler  
18 against the liner and flanged ends to effectively fluid seal the ends.

19 2. The method of Claim 1 further including the steps of providing a compressible ring  
20 shaped member shaped for receipt between the flanged ends of the two pipes; placing, prior  
21 to the compressing step, the compressible member between the two flanged ends; and  
22 wherein the compressing step further includes the step of compressing the compressible ring  
23 shaped member.

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1 3. The method of Claim 1 where in the fasteners of the of the steps of providing a  
2 fastener include a multiplicity of nut and bolt combinations for engaging adjacent bolt holes  
3 of adjacent flared ends.

4 4. The method of Claim 1 further including the steps of providing a compressible  
5 member shape for receipt between the flanged ends of the two pipes; wherein the fasteners  
6 of the step of providing a fastener include a multiplicity of nut and bolt combinations for  
7 engaging the adjacent bolt holes of adjacent flared ends; placing, prior to the compressing  
8 step the compressible member between the two flanged ends; and wherein the compressing  
9 step includes the step of incrementently rotating the nuts with respect to the bolts of the nut  
10 and bolt combinations to incrementently compress and wedge the coupler against the liner  
11 and further to incrementently compress the compressible member between <sup>the</sup> flanged ends.

12 5. In combination with a pipe joint, the pipe joint for joining a first end of a first pipe  
13 with a first end of a second pipe, the two first ends each having a flange and a tapered inner  
14 surface;

15 a cylindrical coupler with milled surfaces for mating with the tapered surfaces of the  
16 two ends; and  
17 fasteners for cooperating with <sup>the</sup> flanges to tighten the joint to wedge the coupler  
18 <sup>1</sup>thereinto, to effect a fluid tight seal to the joint.

19 6. The combination of Claim 5 wherein the milled surfaces of the cylindrical coupler  
20 are between 5° and 45°.

21 7. The combination of Claim 5 wherein the cylindrical coupler is made of steel.

22 8. The combination of Claim 5 wherein the cylindrical coupler includes alignment  
23 means for assisting in the alignment of the coupler with the ends of the two pipes.

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1 9. The combination of Claim 5 further including a compressible member, for  
2 engagement of and compression between the ends of the two pipes.

3 10. The combination of Claim 5 wherein the fasteners include a multiplicity of nut and  
4 bolt combinations.

5 11. The combination of Claim 5 further comprising two liner sections dimensioned for  
6 receipt into the two ends of the two pipes, the liners including flared portions for matching  
7 the milled surfaces of the inner surfaces of the ends of the pipes.

8 12. The combination of Claim 11 where the milled surface the cylindrical coupler are  
9 between 5° and 45°.

10 13. The combination of Claim 11 wherein the cylindrical coupler is made of one of steel.

11 14. The combination of Claim 11 wherein the cylindrical coupler includes alignment  
12 means for assisting in the alignment of the coupler with the ends of the two pipes.

13 15. The combination of Claim 11 further including a compressible member, for  
14 engagement of and compression between the ends of the two pipes.

15 16. The combination of Claim 5 wherein the compressible member is ring shaped.

16 17. The combination of Claim 16 wherein the compressible member is made of copper.

17 18. The combination of Claim 15 wherein the compressible member is ring shaped.

18 19. The combination of Claim 18 wherein the compressible member is ring shaped.

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